Commentary:

Development of the Malocclusion Impact Questionnaire (MIQ) to measure the oral health-related quality of life of young people with malocclusion: Part 1 – qualitative inquiry
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Development of the Malocclusion Impact Questionnaire (MIQ) to measure the oral health-related quality of life of young people with malocclusion: Part 2 - cross-sectional validation
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Healthcare systems throughout the World face an unprecedented level of demand and ever increasing costs. This is most obvious in developed countries where health services are extensive and expensive. Yet healthcare is not something we can do without - "The health of the people should be the supreme law" attributed originally to Cicero, has over time has been adopted by philosophers, police services and London boroughs as a central tenet of public policy. I mention it here as a starting point for our considerations in planning health services, since it speaks to the necessity of health. I believe that improving health is a good thing in and of itself quite aside from arguments about the importance of a healthy workforce and the other benefits of health for the economy[1]. However given the ever increasing demands on health service funding, one logical response is to focus only on those treatments and interventions that can be demonstrated to produce health benefits. As a result providers of healthcare are faced with the challenge of demonstrating empirically that not only are the interventions they provide effective in terms of the measures that they believe to be important, but also that they lead to demonstrable improvements that are valued by our patients. Orthodontists in the UK will be familiar with the pressure to demonstrate their value in a publicly funded health system.

So what do patients expect from a healthcare system. Ironically, I suspect that most patients expect that the treatment given to them by their dentist, doctor or other healthcare provider is going to return them to health, or at the very least make them healthier. But this does rather beg the question of what 'health' is. The WHO's rather idealistic definition, "A complete state of physical, mental and social well-being, and not merely the absence of disease or infirmity" celebrates it's 70th birthday next year[2] but still offers little practical guidance in terms of thinking about the outcomes of healthcare. In the absence of a simple definition of health many researchers and policy developers have focused instead on modeling how poor health affects our life, and such models have been the foundation of the development of measures of Quality of Life and of course Oral Health Related Quality of Life. Most of the current measures of Oral Health Related Quality of Life are based around the original WHO International

Classification of Impairment, Disability and Health[3] which identified several key concepts including:

- Disease. Pathological entities diagnosed by means of clinical signs and symptoms
- Impairment. Anatomical loss, structural abnormality or disturbance in chemical processes
- Functional limitation. Restriction in the functions normally expected of the body
- Pain and discomfort. Self-report pain and discomfort, physical and psychological symptoms. Not directly observable.
- Disability. Limitations in, or lack of ability to perform, the activities of daily living
- Handicap. The disadvantage and deprivation experienced by individuals with impairments, functional limitations, pain and discomfort or disabilities because they cannot or do not conform to the expectations of their social group.

Disease may lead to impairment which in turn may lead to functional limitation, pain and discomfort. Ultimately functional limitation may limit the ability of an individual to perform activities of daily living thus resulting in disability. To the extent that those activities are expected by the social group to which the individual belongs, this may result in handicap. The original model has been updated, and renamed the International Classification of functioning, Disability and Health to emphasise both that disability can occur at different levels (the organ, the individual or within a social context) and that the impact of dysfunction is dependent on the context in which the individual lives[4]. So for example malocclusion may conceivably result in disability in speaking or chewing (organ level), embarrassment (individual level) or in terms of the judgements made about an individual at a job interview (society level)[5]. Our expectations of the 'Ideal smile' are likely to be influenced by the social context in which we live[6].

Orthodontists have previously sought to demonstrate the effect that their treatments have upon impairment, through demonstrating changes in the measured aspects of occlusion – for example PAR scores, overjet values etc. There have also been attempts through the use of quality of life measures, and oral health related quality of life measures to determine the impact of malocclusion on such measures, and even exploring the change in quality of life following treatment. Shaw has argued comprehensively and convincingly that the evidence does not support the effectiveness of orthodontic treatment in the long term to reduce pain and discomfort, enhance function or reduce disability[7]. However the possibility remains that the measures we have previously used have not addressed the domains that are most pertinent to orthodontic patients, and thus have missed key aspects of the impact of malocclusion. It is the latter that the Malocclusion Impact Questionnaire seeks to quantify – how does a malocclusion affect health? The MIQ seeks to ascertain the patients' views of the extent of impairment, functional limitation, pain and discomfort and Disability experienced by individuals with Malocclusion. It is derived from qualitative data exploring the lived experience of individuals with malocclusions and thus focuses on those aspects of the impact of malocclusions that are most important

to patients. Careful psychometric analysis has led to the development of an empirically reliable and valid scale. The potential uses of the questionnaire are many but broadly fall into two groups – longitudinal evaluation of changes in impact over time, and the relationship of such changes to treatment, and the comparison of the effectiveness of different approaches to treatment. Thus it is a tool for determining the level of impact experienced by individuals with malocclusion and how treatment affects that impact. I look forward to seeing the scale used widely to inform our understanding of the value of orthodontics.

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